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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/706,672	11/11/2003	Barry L. Berson	SAI.P005 US	8313

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EXAMINER	
CZEKAJ, DAVID J	
ART UNIT	PAPER NUMBER
2621	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/706,672	BERSON ET AL.	
	Examiner	Art Unit	
	DAVID CZEKAJ	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 November 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

In view of the Appeal Brief filed on 10/27/08, PROSECUTION IS HEREBY REOPENED. A new ground of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

/Mehrdad Dastouri/

Supervisory Patent Examiner, Art Unit 2621

Response to Arguments

On page 8, applicant argues that Sankrithi fails to disclose removing obstructions without interfering with the field of view of the sensor. While the applicant's points are understood, the examiner respectfully disagrees. See for example Sankrithi column 9, lines 23-32. There Sankrithi discloses using a cleaning fluid to clean the transparent front face of the camera mounting structure. By using a cleaning fluid, Sankrithi is

cleaning the sensor without interfering with the field of view of the sensor. While Sankrithi discloses the use of a wiper blade, the examiner notes that when not in use, the wiper blade will stop on either side of the transparent face, thus not interfering with the field of view. Furthermore, the examiner notes that on pages 8-9, paragraph 0030, of the specification, the applicant recites cleaning using a brush or wiper, which as shown above, is also performed by Sankrithi. Therefore the rejection has been maintained.

On pages 10, applicant argues that Sankrithi fails to disclose that the window and display device showing different portions of the scene. While the applicant's points are understood, the examiner respectfully disagrees. Sankrithi illustrates in figure 6A and discloses in column 7, lines 31-42, displaying an image of the scenery outside the vehicle, the image being the landing assembly on a first display 270L. Sankrithi further illustrates another window (displays 275 and/or 270R) providing another portion of the out the window display. Therefore the rejection has been maintained.

On page 11, applicant argues that Sankrithi fails to disclose a common display area associated with two mutually exclusive windows of information on the display device, the area being customized by the operator to display detailed information. While the applicant's points are understood, the examiner respectfully disagrees. Sankrithi illustrates in figure 6A, a common display area with two mutually exclusive windows of information. Sankrithi further discloses in column 6, lines 22-35, changing the information on the display via the use of a knob. Therefore the rejection has been maintained.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 14-18 are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. While the claims recite a series of steps or acts to be performed, a statutory "process" under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or thing (Reference the May 15, 2008 memorandum issued by Deputy Commissioner for Patent Examining Policy, John J. Love, titled "Clarification of 'Processes' under 35 U.S.C. 101"). The instant claims neither transform underlying subject matter nor positively tie to another statutory category that accomplishes the claimed method steps, and therefore do not qualify as a statutory process. It is unclear what performs the sending, generating, and outputting steps recited in the claim, thus not being tied to another category or transforming underlying subject matter.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 8 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in

the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The cleaning mechanism, as recited in claim 8, is located within the protective housing. As shown in figure 3, and described in paragraph 0030 of the specification, the cleaning mechanism is located outside the protective housing.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sankrithi et al. (6405975), (hereinafter referred to as "Sankrithi") in view of Ramachandran et al. (6259475), (hereinafter referred to as "Ramachandran").

Regarding claim 1, Sankrithi discloses an apparatus that relates to airplane ground maneuvering systems (Sankrithi: column 1, lines 12-13). This apparatus comprises "at least one sensor operable to capture images representing scenery outside the vehicle" (Sankrithi: column 3, lines 53-55, wherein the sensor is the camera), "a protective housing enclosing the sensor, wherein the housing further comprises a transparent aperture through which the sensor captures images" (Sankrithi: column 9, lines 1-15, wherein the aperture is the clear lens), "a cleaning mechanism operable to remove obstructions from the aperture without interfering with the field of view of the sensor" (Sankrithi: column 9, lines 1-32, wherein the window cleaning is the cleaning mechanism),

and "an operator display through which images representing the scenery outside the vehicle are displayed" (Sankrithi: figure 6A). However, Sankrithi fails to disclose the rotating transparent conical surface as claimed. Ramachandran teaches that prior art vehicle camera systems require enclosures that are of significant size (Ramachandran: column 2, lines 26-30). To help alleviate this problem, Ramachandran discloses "a rotating conical surface" (Ramachandran: figures 13-14; column 15, lines 31-42, wherein the rotation is the rotation performed by the motor and rings). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to take the apparatus disclosed by Sankrithi and add the conical surface taught by Ramachandran in order to obtain an apparatus that helps reduce the size of vehicle camera systems.

Regarding claim 2, Sankrithi discloses "wherein the sensor comprises a camera" (Sankrithi: column 3, lines 53-55).

Regarding claim 3, Sankrithi in view of Ramachandran disclose "wherein an outer surface is wiped within the housing to remove obstructions" (Sankrithi: column 9, lines 10-15, wherein the wiping is performed by the rubbery squeegee; Ramachandran: figures 13-14; column 15, lines 31-42).

Regarding claim 4, Sankrithi discloses "the cleaning mechanism is located to not obstruct the sensors field of view" (Sankrithi: figure 11; column 9, lines 1-15, wherein the wiper housing 452 is mounted to the plane away from the camera).

Regarding claim 5, Sankrithi discloses "the camera further comprises an infrared camera" (Sankrithi: column 13, lines 43-46).

Regarding claim 6, Ramachandran discloses "the cleaning mechanism further comprises a mechanical brush" (Ramachandran: column 15, lines 44-49, wherein the mechanical brush is the wiper. The wiper is mechanically moved by a motor to brush or wipe the surface).

Regarding claim 7, Sankrithi discloses "the cleaning mechanism comprises a cleaning fluid applicator that applies cleaning solution to the aperture" (Sankrithi: column 9, lines 10-15, wherein the cleaning solution is the combination of the air mixed with water, antifreeze, or cleaning solution).

Regarding claim 8, note the examiners rejection for claim 1, and in addition Sankrithi discloses "images representing scenery outside the vehicle are derived from captured images from the sensor" (Sankrithi: column 3, lines 53-55, wherein the camera derives the images).

Regarding claim 9, note the examiners rejection for claim 2.

Regarding claim 10, Sankrithi discloses "the vehicle comprises an aircraft" (Sankrithi: column 3, lines 44-47).

Regarding claim 11, note the examiners rejection for claim 5.

Regarding claim 12, note the examiners rejection for claim 6.

Regarding claim 13, note the examiners rejection for claim 7.

Regarding claim 14, note the examiners rejection for claim 1, and in addition, Sankrithi discloses "sending images of a portion of the out-the-window

scene from the viewpoint of the sensor" (Sankrithi: figure 6A, wherein the images are sent to the display) and "outputting image of the scenery outside the vehicle to a first display, wherein the display device is positioned to provide the portion of a desired out-the window visual scene in combination with a window that provides another portion of the desired out-the-window visual scene" (Sankrithi: figure 6A, wherein multiple views are displayed to the user).

Regarding claim 15, although not disclosed, it would have been obvious to mount the second camera within a protective housing (Official Notice). Doing so would have been obvious in order to protect the camera against the influence of outside elements.

2. Claims 16-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sankrithi et al. (6405975), (hereinafter referred to as "Sankrithi") in view of Ramachandran et al. (6259475), (hereinafter referred to as "Ramachandran") in further view of Jamieson et al. (6665063), (hereinafter referred to as "Jamieson").

Regarding claim 16, note the examiners rejection for claim 1, and in addition, claim 16 differs from claim 1 in that claim 16 further requires fusing two image together. Jamieson teaches that for manned aircraft, collisions with ground and air based obstacles results in numerous fatalities each year (Jamieson: column 2, lines 32-35). To help alleviate this problem, Jamieson discloses "images from the first and second sensor are fused to create a first fused image" (Jamieson: figures 13A and 14A, wherein the images are fused or combined to produce the output image). Therefore, it would have been obvious

to one having ordinary skill in the art at the time the invention was made to take the apparatus disclosed by Sankrithi and add the processing taught by Jamieson in order to obtain an apparatus that helps prevent aircraft collisions.

Regarding claim 17, Jamieson discloses "combining the fused image with symbols representing objects" (Jamieson: figures 13A and 14A, wherein the symbols are the circles and lines representing objects).

Regarding claim 18, Jamieson discloses "fusing the first fused image with an enhanced image from at least one of RADAR and a FLIR sensor" (Jamieson: column 16, lines 5-10).

Regarding claim 19, note the examiners rejection for claims 1 and 14, and in addition Sankrithi in view of Jamieson disclose "transform the first sensor image to a viewpoint image from an operator station in the device, wherein the viewpoint image is seized and oriented to conform to the scenery outside the device from the operator station" (Sankrithi: figures 16A and 16B, wherein the image is defined within the field of view and oriented to fit the display; Jamieson: figures 13A and 14A).

Regarding claim 20, Jamieson discloses "the symbols represent information regarding the operation state of the device and the moving objects detected in the image" (Jamieson: column 16, lines 25-30, wherein the operation state information is the velocity, speed, and heading; column 16, lines 31-35, wherein the distance to the object is displayed).

Regarding claim 21, note the examiners rejection for claim 20.

Regarding claim 22, although not disclosed, it would have been obvious to generate a symbol representing weather hazards (Official Notice). Doing so would have been obvious in order to more easily warn the pilot of adverse weather conditions.

Regarding claim 23, Jamieson discloses "receive an enhanced image in low-visibility conditions" (Jamieson: column 16, lines 5-10, wherein the RADAR or FLIR provide the image in low-visibility conditions).

Regarding claim 24, Jamieson discloses "fuse the viewpoint image with the enhanced image" (Jamieson: figures 13A and 14A).

Regarding claim 25, Jamieson discloses "utilize data from a position sensor to determine the location of the objects" (Jamieson: column 16, lines 31-35, wherein the location of the object is determined with respect to the aircraft).

Regarding claim 26, Jamieson discloses "utilize data form off-board data sources regarding the objects" (Jamieson: figure 36, wherein the transmit/receive fiber bundles receive off-board data).

Regarding claim 27, note the examiners rejection for claim 2.

Regarding claims 28-29, Jamieson discloses the sensor is a RADAR and FLIR sensor" (Jamieson: column 16, lines 5-10).

Regarding claim 30, Sankrithi discloses "generate a common display area associated with two mutually exclusive windows of information on the display device, the area being customized by the operator to display detailed

information" (Sankrithi: figure 6A; column 6, lines 23-25, wherein the knob adjusts the displays).

Regarding claim 31, note the examiners rejection for claims 1, 14, and 15, and in addition Sankrithi discloses "first and second display devices" (Sankrithi: figure 6A), "outputting the two viewpoints to the first and second display devices" (Sankrithi: figure 6A).

Regarding claim 32, Jamieson discloses "combining the image with symbols representing the objects and primary flight information" (Jamieson: column 16, lines 25-30, wherein the primary flight information is the velocity, speed, heading, and power levels).

Regarding claim 33, note the examiners rejection for claim 18.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID CZEKAJ whose telephone number is (571)272-7327. The examiner can normally be reached on Mon-Thurs and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri can be reached on (571) 272-7418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dave Czekaj/
Primary Examiner, Art Unit 2621